AMENDMENT NO. 1
TO THE
WORK PLAN
FOR
LCP CHEMICALS, INC. SUPERFUND SITE
LINDEN, NEW JERSEY

Prepared For

ISP ENVIRONMENTAL SERVICES, INC.

Prepared By

URS
Construction Services

Cranford, New Jersey

EPA Order Index No. II-CERCLA-02-99-2015

June 19, 2001

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LIST OF ACRONYMS

CHSO	Collateral Health and Safety Officer
CRZ	Contamination Reduction Zone
EZ	Exclusion Zone
HSO	Health and Safety Officer
HASP	Health and Safety Plan
IRA	Interim Removal Action
ISP	ISP Environmental Services, Inc.
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priority List
PPE	Personal Protective Equipment
PRP	Potentially Responsible Parties
PjM	Project Manager
RCRA	Resource Conservation and Recovery Act
USEPA	U.S. Environmental Protection Agency

1.0 PROJECT DESCRIPTION

1.1 GENERAL

URS Corporation has been contracted by ISP Environmental Services, Inc. (ISP) to execute an Interim Removal Action (IRA) for the LCP Chemicals, Inc. Superfund Site in Linden, New Jersey.

This Amendment No1 to the Work Plan describes the history of LCP Chemicals, Inc. and the methods that will be used to conduct the IRA. This Amendment No 1 to the Work Plan is being submitted as an addendum to the IRA work plan (August 14, 2000). Amendment No 1 to the Health and Safety Plan (HASP) for IRA activities that establishes the procedures to protect site personnel from potential health and safety hazards resulting from the IRA tasks is being provided as a separate document.

1.1 SITE DESCRIPTION

The LCP Chemicals, Inc. Superfund Site is located in an industrial area at the foot of South Wood Avenue in Linden, Union County, New Jersey. The general site vicinity is known as Tremley Point. The site is centered at 40 degrees 36 minutes 29 seconds latitude and 74 degrees 12 minutes 41 seconds longitude on the United States Geological Survey Arthur Kill, N.Y./N.J. quadrangle map (Figure 1-1). The site encompasses about 26 acres and consists of the City of Linden Tax Block 587, Lot 3.01, Lot 3.02, and Lot 3.03.

The site is bounded to the north by the ISP Environmental Services Inc. Site, to the northeast by Northville Industries' bulk petroleum storage area, to the southeast by the Mobil Gas bulk petroleum storage area, and to the south by the British Petroleum bulk petroleum storage area. A small, re-channeled tidal creek, South Branch Creek, flows eastward from the site and drains into the Arthur Kill.

As shown in Figure 1-1, the main Conrail line (Central Railroad of New Jersey) parallels the New Jersey Turnpike. A Conrail Spur (Sound Shore Branch) parallels the shoreline of the Arthur Kill and crosses the site along Avenue B. A set of Conrail spurs, roughly parallel to Tremley Point Road, borders the southern part of the site. The Tremley Point Road spurs and the Sound Shore spur join at the southeast end of the site. Figure 1-2 shows the locations of the different IRA cleanup areas.

1.3 SITE HISTORY

The site consists of a former chlorine production plant and ancillary terminal, packaging, and distribution areas. Between 1955 and 1982, the plant manufactured gaseous chlorine using a technology known as the mercury cell electrolysis process. A by-product of this process was wastewater and sludge that contained residual elemental mercury. Beginning in the early 1980s, both the USEPA and the New Jersey Department of Environmental Protection (NJDEP) conducted numerous inspections and limited investigations at the site because of environmental concerns associated with the mercury cell process. The results of their investigations indicated that there were spills at the site and to South Branch Creek, although the magnitude and extent of contamination, if any, were not determined.

In 1985, LCP Chemicals, Inc. stopped their production activities and began to dismantle the facility. In 1995, a Resource Conservation and Recovery Act (RCRA) Facility Investigation Work Plan was prepared for the site to evaluate potential contamination in areas of concern. The Work Plan was approved by the USEPA but it was not implemented because the owner of the site did not have the financial resources for remediation work. In 1996, the USEPA evaluated the site for a Superfund Removal Action, but determined that there were no acute threats to human health and environment and that consequently, a short-term, emergency cleanup was not warranted. The USEPA added the LCP Chemicals, Inc. site, a Division of Hanlin Group, Inc., to the National Priority List (NPL) on July 27, 1998 (which required that a CERCLA RI/FS be conducted for the site). In September 1998, the USEPA identified GAF Chemicals Corporation as one of six potentially responsible parties (PRPs) for the site. The other five PRPs identified by the USEPA were Caleb Brett (USA), Inc., Kuehne Chemical Company, Inc., Praxair, Inc., Union Carbide Corporation, and LCP Chemicals, Inc. (a division of the Hanlin Group, Inc.). ISP Environmental Services Inc., which has assumed the liabilities of GAF Chemicals Corporation for this site, executed a Consent Order with the USEPA on May 31, 1999.

1.4 SITE OWNERSHIP

The Grasselli Chemical Company began industrial operations in the vicinity of the site around 1885. Before then, the area was undeveloped marshland. In 1924, the company became the Grasselli Dyestuff Company. It was incorporated in 1929 as American I.G. Chemical Corporation, which was owned by the German company I.G. Farbenindustrie, A.G. In 1939, the company changed its name to General Aniline & Film Corporation. In 1942, 98 percent of the company stock was seized

by the United States Justice Department as a war asset and the company was operated by the U. S. Government acting as Alien Property Custodian. The chlorine plant was constructed at the site sometime around 1955; the site was generally undeveloped marshland up until that time. In 1965, the U.S. Government sold the stock in a public offering and in 1968, General Aniline & Film Corporation changed its name to GAF Corporation. In 1971, GAF Corporation shut down the chlorine production plant (the site).

In 1972, GAF Corporation (GAF) sold the plant to Linden Chlorine Products, Inc. of Edison, New Jersey. The company was founded by former GAF employees and formed solely for the reopening and operation of the Linden chlorine plant. In 1975, Linden Chlorine Products, Inc. reported that they owned no other facilities and that they produced only three products - chlorine, sodium hydroxide, and hydrogen.

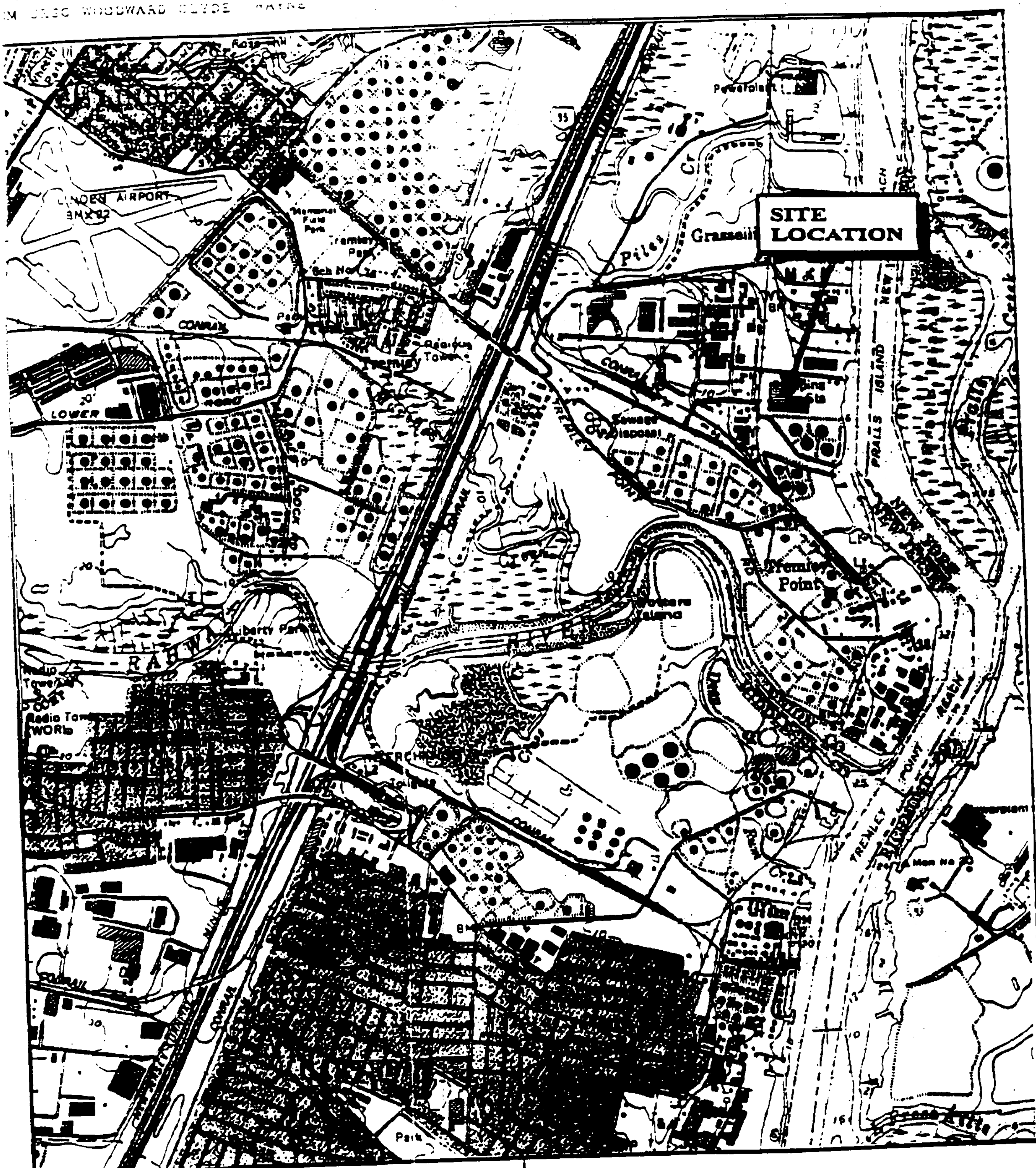
By the early 1980s, as the company acquired additional chlorine production facilities along the U.S. east coast, Linden Chlorine Products, Inc. became LCP Chemicals-New Jersey, Inc., a subsidiary of Linden Chemicals & Plastics, Inc. Between 1987 and 1989, the company name was changed to LCP Chemicals-New Jersey, a division of Hanlin Group, Inc. On July 10, 1991, Hanlin Group, Inc. filed for bankruptcy under Chapter 11 of the United States Bankruptcy Code and sold all of its operating assets before April 1994. In August 1994, the USEPA conducted a site visit and confirmed that the chlorine process buildings were decommissioned, the facility was no longer functional, and that the site was vacated by LCP employees. Active Water Jet, Inc., a pipe cleaning company, who was a tenant at the site since about the early 1990s, remained at the site until late 2000.

1.5 SITE RISKS

A RI/FS Work Plan has been prepared and submitted to EPA for this site. During the site visits, several items were observed that might be a potential threat to human health and the environment. These items make up the scope of work in this Amendment No 1 to the Work Plan. It is planned to address these items prior to the start of the RI/FS fieldwork. The items are as follows:

Metallic mercury spills on the floor and collection trenches of buildings 230 and 240.
About 5 pounds of Metallic mercury on a concrete floor slab, outside building 230.
About 100 lbs of mercury contaminated soil in an open top 55-gallon drum, outside building 230.
A poorly supported 25,000-gallon tank (saturator) adjacent to building 223.

The work Scope to address these items is presented in section 3.0



0 2000 4000

SCALE (FEET)

N

MAP SOURCE:

U.S.G.S. 7.5 MINUTE SERIES QUADRANGLE OF ARTHUR KILL N.Y.-N.J., DATE 1966, PHOTOREVISED 1981.

SITE LOCATION MAP
LCP CHEMICALS, INC.
LINDEN, NEW JERSEY

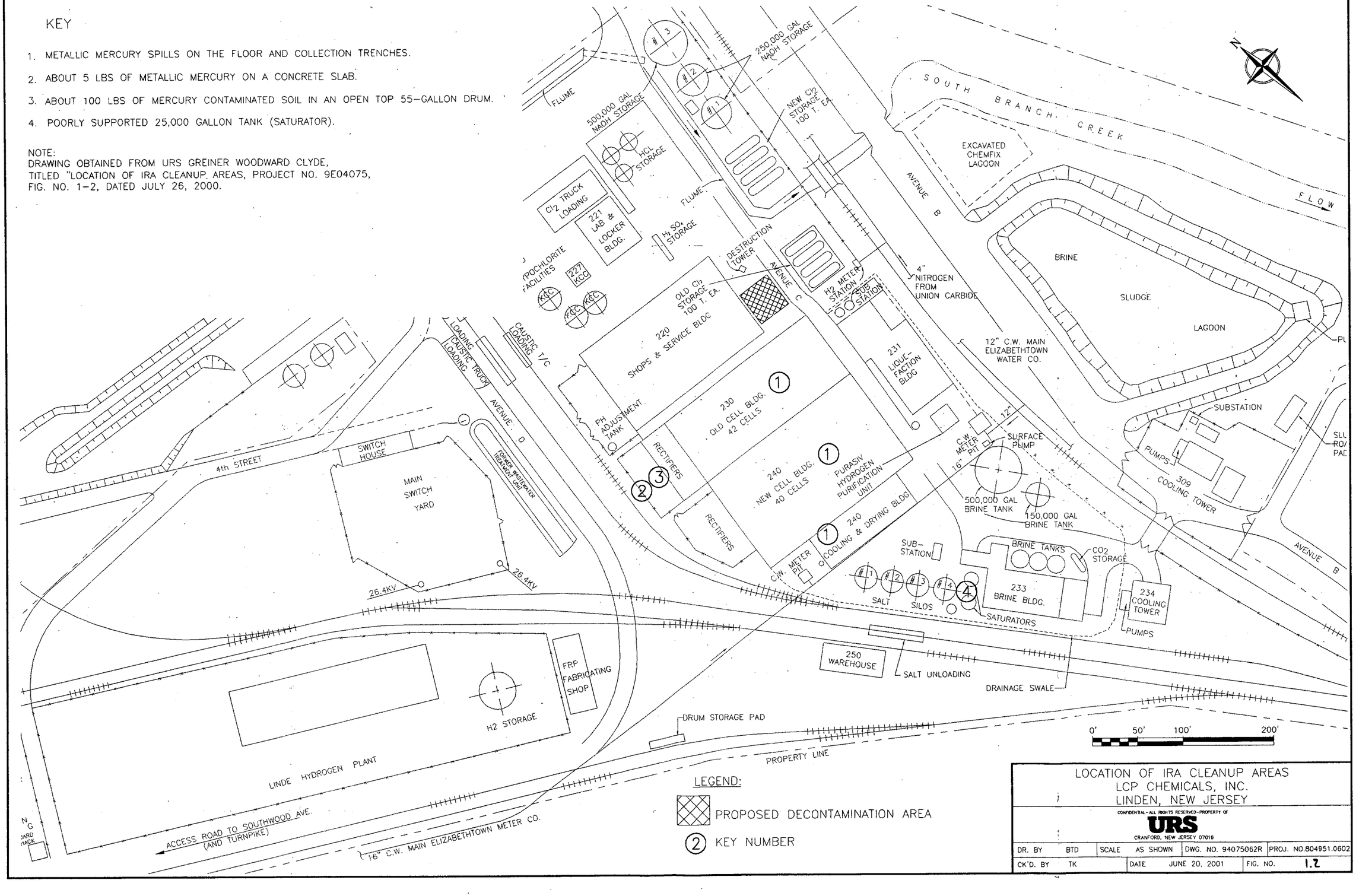
URS Greiner Woodward Clyde
WAYNE, NEW JERSEY

DR. BY	SCALE AS SHOWN	DWG. NO. 94075002	PROJ. NO. [illegible]
CKD. BY AKM	DATE JULY 23, [illegible]		FIG. NO. 1-1

KEY

1. METALLIC MERCURY SPILLS ON THE FLOOR AND COLLECTION TRENCHES.
2. ABOUT 5 LBS OF METALLIC MERCURY ON A CONCRETE SLAB.
3. ABOUT 100 LBS OF MERCURY CONTAMINATED SOIL IN AN OPEN TOP 55-GALLON DRUM.
4. POORLY SUPPORTED 25,000 GALLON TANK (SATURATOR).

NOTE:
DRAWING OBTAINED FROM URS GREINER WOODWARD CLYDE,
TITLED "LOCATION OF IRA CLEANUP AREAS, PROJECT NO. 9E04075,
FIG. NO. 1-2, DATED JULY 26, 2000.



LOCATION OF IRA CLEANUP AREAS
LCP CHEMICALS, INC.
LINDEN, NEW JERSEY

URS
CRANFORD, NEW JERSEY 07016

DR. BY	BTD	SCALE	AS SHOWN	DWG. NO. 94075062R	PROJ. NO.804951.0602
CK'D. BY	TK		DATE JUNE 20, 2001	FIG. NO.	1.2

2.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

URS project personnel responsible for the execution of this IRA include the Project Manager, Project Health and Safety Officer, Site Superintendent, and craft labor. The project organization chart is shown in Figure 2-1.

2.1 PROJECT MANAGER: MR. TAREK KHOURI

The Project Manager (PjM) is responsible for the overall direction and implementation of the progress of all field activities, including the management of all on-site field personnel, and the implementation of actions to ensure compliance with this Amendment. The PjM is also responsible for ensuring that adequate resources are assigned to the project to complete it incident free. Other responsibilities will include:

- Verify and document the project is performed in a manner consistent with the URS Corporate Health and Safety Program;
- Ensure that the Work Plan and the Health and Safety Plan are prepared and approved;
- Monitor compliance of the Work Plan and the Health and Safety Plan by URS and subcontractor personnel;
- Ensure that all URS personnel and subcontractors designated to work on this project are qualified according to URS medical surveillance and training requirements; and
- Maintain communication with ISP Authorized Representative.

A copy of Mr. Khouri's resume is located in Attachment 1

2.2 PROJECT HEALTH AND SAFETY OFFICER: MRS. MARGARET MIKULICH

The Project Health and Safety Officer (HSO) will serve as a health and safety resource for the collateral HSO (CHSO) during the implementation of this IRA. The HSO will be primarily responsible for the technical and administrative functions relative to health and safety during site activities. The Project HSO will have the following duties:

- In conjunction with the Project Manager, ensure all site activities are performed in a manner consistent with the URS Corporate Health and Safety Program;
- Direct health and safety activities on-site;
- Confirm that all URS personnel and subcontractors designated to work on this project are qualified according to URS medical surveillance and training requirements;

- Report all incidents, accidents, and near misses to the Project Manager; and
- Maintain health and safety equipment on-site;

The HSO will have the authority to take the following actions:

- Stop site activities if an imminently dangerous situation exists; and
- Direct personnel to change a work practice if it is determined to be hazardous to the health and safety of site personnel.

A copy of Mrs. Mikulich's resume is located in Attachment 1.

2.3 SITE SUPERINTENDENT: MR. HAROLD HOFFMAN

Mr. Hoffman is responsible for managing all daily field activities, including subcontractors, related to the requirements of the scope of work. The Site Superintendent will also serve as the Collateral Health and Safety Officer (CHSO). A CHSO is a URS employee assigned the duty and/or responsibility of an HSO, who is not primarily employed by URS as a health and safety professional but who does have the technical knowledge, training, and experience to serve in this capacity. Other responsibilities will include:

- Ensure site activities are scheduled with adequate personnel and equipment resources to perform scheduled activities safely;
- Ensure adequate communication between field personnel and emergency response personnel is available; and
- Maintain communication with subcontractors.

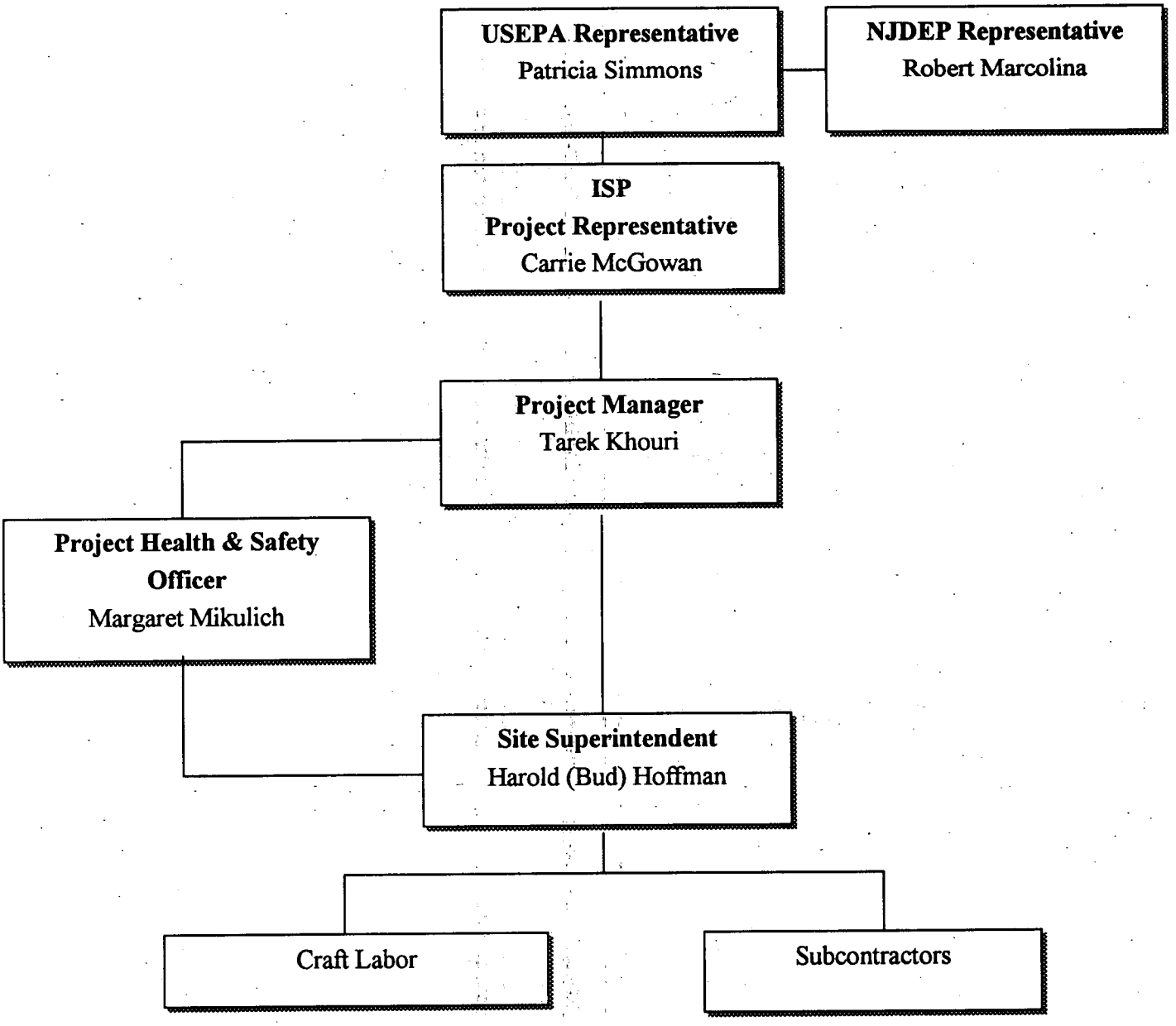
A copy of Mr. Hoffman resume is located in Attachment 1.

2.4 WORK CREW PERSONNEL

The work crew will have the following responsibilities:

- Immediately report any unsafe or potentially hazardous conditions to the CHSO;
- Report all incidents, accidents, and near misses, no matter how minor they may seem, immediately to the CHSO;
- Maintain knowledge of the information, instructions, and emergency response procedures contained in the Work Plan and the HASP.

FIGURE 2-1 PROJECT ORGANIZATION CHART
LCP Chemicals, Inc. Superfund Site
Linden, New Jersey



3.0 SCOPE OF WORK

The scope of work applicable to this Amendment No 1 to the Work Plan includes sampling, clean up, and data collection activities required to ensure that the potential immediate threats of releases are removed. After the Interim Removal Action is completed, disposal manifests, analytical data, weight tickets, and other documents generated during the cleanup work will be compiled. An Interim Remedial Action Report will be prepared which provides a technical overview of the site cleanup and documentation of the work. Copies of the report will be provided as specified in the site Consent Order.

The scope of field activities under this IRA will include the following:

- Removal and cleanup of the metallic mercury spills on the floor and collection trenches in buildings 230 and 240.
- Removal and cleanup of approximately 5 pounds of Metallic mercury on a concrete floor slab, outside building 230.
- Removal and cleanup of approximately 100 lbs of mercury contaminated soil in an open top 55-gallon drum, outside building 230.
- Removal of a poorly supported 25,000-gallon tank (saturator) adjacent to building 223.

URS will subcontract with a disposal company for the offsite transportation and disposal of all waste covered under this IRA.

3.1 METALLIC MERCURY SPILLS ON THE FLOOR AND COLLECTION TRENCHES IN BUILDINGS 230 AND 240.

Summarized below is an outline of the procedures the URS team will follow for the cleanup and removal of the mercury spills from the floor:

- URS team will don mercury-protective PPE and set up an Exclusion Zone (EZ) and a Contamination Reduction Zone (CRZ).
- Perform initial air monitoring for mercury, using a mercury vapor analyzer.
- Large debris will be visually inspected for free mercury. The debris will then be stored in a clean storage area and sampled for mercury, before being disposed off site into roll-off boxes.
- Metallic mercury will be pumped out using a mercury vacuum and then stored in special mercury containers.

- All other debris and soil will be segregated according to contamination level.
- For hard to reach areas or for mercury stuck in floor cracks, sprinkle Hg-absorb powder on remaining small droplets of Hg. Then, cleanup absorbed Hg using Hg-absorb sponges and carefully place into disposal container. A hand-pump vacuum can also be used to remove Hg from floor cracks and other hard to reach areas.
- Seal disposal containers and relinquish to the selected disposal company for disposal.
- There will be 4 different types of waste:
    1. Free metallic mercury
    2. Soil and debris containing more than 260 ppm Hg and free Hg liquid present
    3. Soil and debris containing less than 260 ppm Hg and no free Hg liquid present
    4. Non-hazardous soil and debris.

Scoops, hand pumps, sponges, and other disposable items used for this task will be containerized in 55-gallon drums by the URS team and properly disposed of by the selected disposal company. Personnel decontamination procedures are addressed in detail in the IRA HASP.

3.2 METALLIC MERCURY ON A CONCRETE FLOOR SLAB OUTSIDE BUILDING 230.

Summarized below is an outline of the procedures the URS team will follow for the cleanup and removal of the mercury spills from the floor:

- URS team will don mercury-protective PPE and set up an EZ and CRZ.
- Perform initial air monitoring for mercury, using a mercury vapor analyzer.
- Metallic mercury will be pumped out using a mercury vacuum and then stored in special mercury containers.
- Seal disposal containers and relinquish to the selected disposal company for disposal.

All disposable items used for this task will be containerized in 55-gallon drums by the URS team and properly disposed of by the selected disposal company. Personnel decontamination procedures are addressed in detail in the IRA HASP.

3.3 MERCURY CONTAMINATED SOIL IN AN OPEN TOP 55-GALLON DRUM, OUTSIDE BUILDING 230.

Summarized below is an outline of the procedures the URS team will follow for the cleanup and removal of the mercury spills from the floor:

- URS team will don mercury-protective PPE and set up an EZ and CRZ.
- Perform initial air monitoring for mercury, using a mercury vapor analyzer.

- Metallic mercury will be segregated from the soil to minimize its levels in the soil as much as possible. The metallic mercury will be stored in special mercury containers. The soil will be sampled and stored in 55-gallons drums for disposal.

All disposable items used for this task will be containerized in 55-gallon drums by the URS team and properly disposed of by the selected disposal company. Personnel decontamination procedures are addressed in detail in the IRA HASP.

3.4 25,000-GALLON TANK (SATURATOR) ADJACENT TO BUILDING 223.

The 25,000-gallon tank is located near the side of building 223 and is accessible from the building through two catwalks. It has a conical shape bottom and is supported by four (4) legs. The elevation of its roof is approximately 50 ft high above the grade. The tank is corroded especially the supporting legs where several holes are present as a result of heavy corrosion and signs of deterioration.

The tank contains a product or salt residues, and the residue will be sampled for TCLP parameters before proceeding with the demolition. The equipment needed for the tank removal are: Manlift, Oxy-acetylene torch, forklift (telescopic), ladder, sawzall, and lifting devices (slings, shackles).

URS will perform an engineering survey and complete the engineering survey forms. URS will then barricade the work area and post appropriate cautionary signs to warn other personnel of ongoing activity. Finally URS will clear the immediate surrounding area of materials that may potentially be damaged or cause obstruction during the demolition activity.

The tank will then be cut in place into several sections. The conical bottom of the tank will be cut first to provide an opening at the bottom to allow the roof or shell steel plates to drop inside the tank as the demolition progresses. A manlift will be used to access the overheads. An oxy-acetylene torch will be used to cut the tank. A sawzall will be used to cut the pipes.

The following activities shall be performed in sequential order to ensure safety of the work crew during the course of demolition:

1. Cut and remove the piping that are supported from the legs of the tank. The pipes shall be cut after the pipe supports (pipe columns) and before the hangers on the side of the building. This will ensure that the remaining pipes are properly supported during and after the demolition activity.

2. Remove the conical shape bottom of the tank by cutting it into manageable sizes. To cut this section, start by making vertical cuts followed by circumferential cuts to detach and drop each piece of cut steel to the ground. After removal of the bottom section, an opening is now available for dropping of steel from higher elevation inside the tank.

3. Remove the 2 catwalks between the tank and the building.

4. Remove the piping and platform on the roof. The cut pieces of platform and piping will be dropped to the ground.

5. Remove the roof. Start by cutting approximately 4' diameter centerpiece, and then cut the remaining portion at least into four segments. Each segment would measure approximately 4' wide x 9' long. When removing each segment, a perpendicular cut shall be made first followed by a circumferential cut to detach and drop the segment to the ground.

6. Remove the shell. The shell will be cut in three layers, and each layer will be cut in four segments. Each segment would measure approximately 8'high x 9' long. When removing each segment, a vertical cut shall be made first followed by a circumferential cut to detach and drop the segment to the ground. Repeat the process until all layers are removed.

7. Remove the four (4) legs.

8. Accumulation of cut segments at the bottom of the tank shall be kept to a minimum to prevent potentially unsafe condition.

Personnel decontamination procedures are addressed in detail in the IRA HASP. All hand tools used for this task will be decontaminated at the decon pad.

4.0 TRAINING

4.1 HAZARDOUS WASTE TRAINING

All personnel working on site will receive training as specified in 29 CFR 1910.120(e). All supervisory personnel will also receive, as a minimum, 8 hours additional specialized training on managing hazardous waste operations. Copies of the training documents shall be maintained on-site and available for review as necessary.

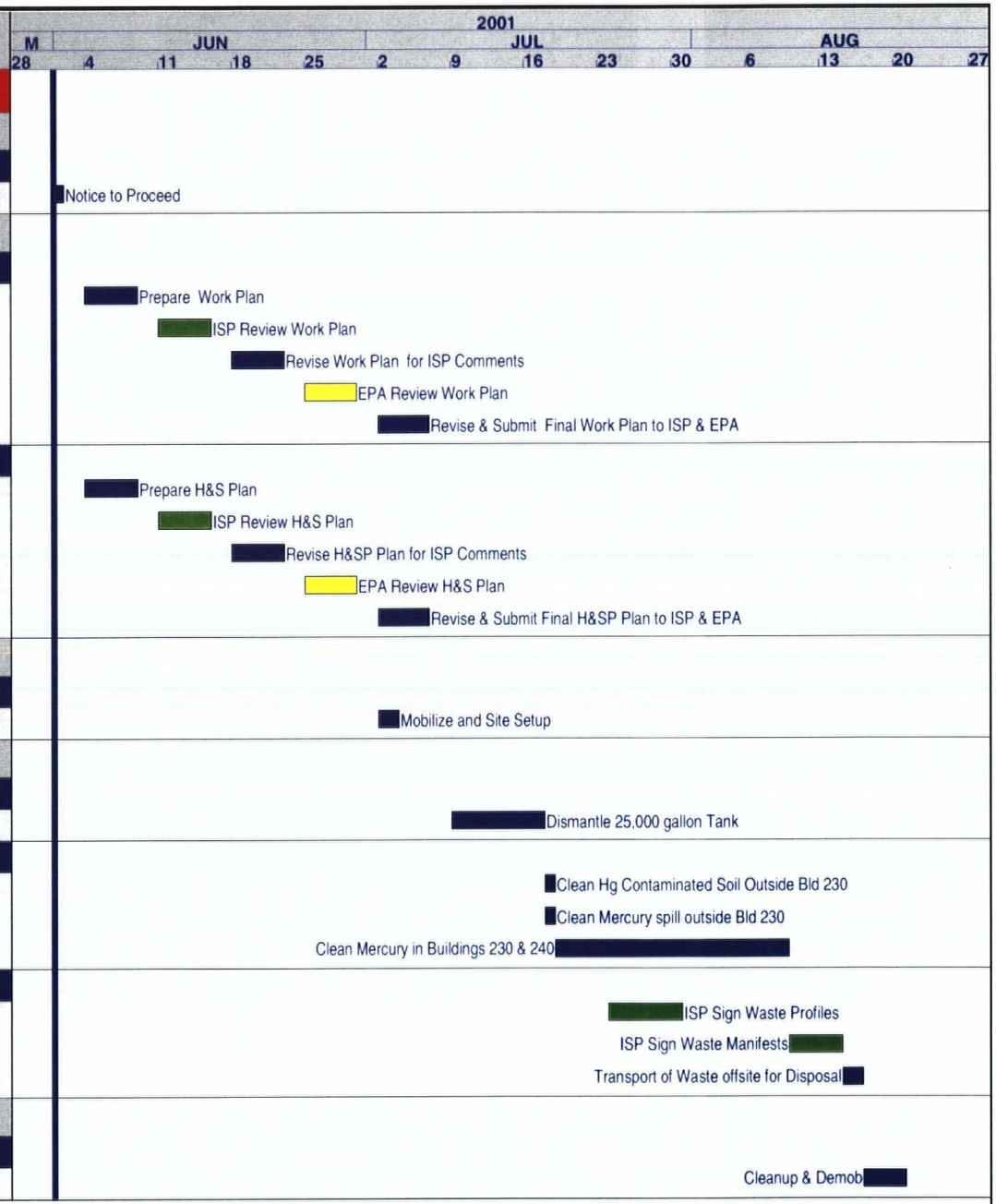
4.2 DAILY SAFETY MEETINGS

A brief safety meeting shall be conducted each day prior to start of each shift. Job activity hazards, protective equipment, etc., shall be discussed and documented. Each employee shall sign the form, acknowledging his/her understanding of the shift's safety requirements. The form shall then also serve as a daily attendance roster for site security and emergency evacuation purposes. Other health and safety concerns will be addressed in details in the HASP.

5.0 SCHEDULE

The Interim Removal Action addressed in this amendment No 1 to the Work Plan will be executed according to the attached schedule (Figure 5-1).

Activity ID	Activity Description	Orig Dur	Rem Dur	% Comp	Early Start	Early Finish
LCP Chemicals Superfund Site						
START & FINISH MILESTONES						
10	Notice to Proceed	1	1	0	01JUN01	01JUN01
WORK PLANS						
WORK PLAN						
20	Prepare Work Plan	5	5	0	04JUN01	08JUN01
30	ISP Review Work Plan	5	5	0	11JUN01	15JUN01
320	Revise Work Plan for ISP Comments	5	5	0	18JUN01	22JUN01
50	EPA Review Work Plan	5	5	0	25JUN01	29JUN01
55	Revise & Submit Final Work Plan to ISP & EPA	5	5	0	02JUL01	06JUL01
HEALTH & SAFETY						
60	Prepare H&S Plan	5	5	0	04JUN01	08JUN01
70	ISP Review H&S Plan	5	5	0	11JUN01	15JUN01
80	Revise H&SP Plan for ISP Comments	5	5	0	18JUN01	22JUN01
300	EPA Review H&S Plan	5	5	0	25JUN01	29JUN01
305	Revise & Submit Final H&SP Plan to ISP & EPA	5	5	0	02JUL01	06JUL01
MOBILIZATION						
100	Mobilize and Site Setup	2	2	0	02JUL01	03JUL01
DEMOLITION & CLEAN UP						
DISMANTLE TANK						
170	Dismantle 25,000 gallon Tank	7	7	0	09JUL01	17JUL01
CLEAN UP						
150	Clean Hg Contaminated Soil Outside Bld 230	1	1	0	18JUL01	18JUL01
160	Clean Mercury spill outside Bld 230	1	1	0	18JUL01	18JUL01
230	Clean Mercury in Buildings 230 & 240	16	16	0	19JUL01	09AUG01
TRANSPORT & DISPOSE						
120	ISP Sign Waste Profiles	5	5	0	24JUL01	30JUL01
240	ISP Sign Waste Manifests	3	3	0	10AUG01	14AUG01
280	Transport of Waste offsite for Disposal	2	2	0	15AUG01	16AUG01
DEMOBILIZATION						
270	Cleanup & Demob	2	2	0	17AUG01	20AUG01



Start Date	01JUN01
Finish Date	20AUG01
Data Date	01JUN01
Run Date	19JUN01 15:06

Early Bar
Progress Bar
Critical Activity

LCPC

Sheet 1 of 1

ISP ENVIRONMENTAL SERVICES, INC.

LCP CHEMICALS SUPERFUND SITE
MERCURY CLEANUP & TANK DEMOLITION

CLASSIC SCHEDULE LAYOUT

URS PROJECT MANAGER: Tarek Khouri

Date	Revision	Checked	Approved
07JUN01	DD06/01/01	JRC	TK

ATTACHMENT 1

RESUMES OF KEY PROJECT PERSONNEL

- Harold Hoffman — Site Superintendent/ Collateral HSO
- Tarek Khouri — Project Manager
- Margaret Mikulich — Project Health and Safety Officer

Experience:

Site Manager/Site Superintendent and Foreman/Quality Control Officer/Health and Safety Officer/Pipe Fitter/Construction Superintendent. URS Corp., 1995-Present.
Laborer, Laidlaw, 1998
Pipe Foreman, Foster Wheeler, 1995
Shop Steward / Foreman, Interstate International, 1992-1993
Quality Control, Silverton Marine Boat Factory 1978-1986

Fields of Experience:

Mr. Hoffman has over 9 years experience as a foreman and superintendent on hazardous waste sites. He has provided supervision and hands-on labor support for numerous tasks associated with the construction of remedial systems; including a $6.8 million groundwater treatment plant where Mr. Hoffman was involved from site mobilization through completion of final punchlist work items. Mr. Hoffman has experience with various respiratory protection used during intrusive operations including, the excavation of buried drums, contaminated soils, and dredging contaminated river sediment.

Mr. Hoffman has over 20 years of general carpentry and building trades experience; providing an established area of specialization for hazardous waste operations and the construction of remedial systems.

- ***Site Manager / Quality Control Officer / Health and Safety Officer, Rhodia Corp. Site, New Brunswick, NJ, 2000:*** Provided oversight; planning and coordination of all work performed on site.

- ***Pipe Fitter, Havertown Superfund Site, Havertown, PA, 2000:*** Read blueprints and installed various types of pipes throughout the treatment plant.

- ***Site Manager / Quality Control Officer / Health and Safety Officer, LCP Chemical Company Site, Linden, NJ, 2001:*** Provided oversight; planning and coordination of all work performed on site.

- ***Site Foreman, Pepe Field Superfund Site, Boonton, NJ, 1999-2000:*** Provided oversight of site daily construction activities.

- ***Pipe Fitter, Circuitron Superfund Site, East Farmingdale, NY, 2000:*** Read blueprints and installed various types of pipes throughout the treatment plant.

- ***Assistant Site Superintendent, USACE, Area 20A Salvage Yard, FAA Technical Center, Atlantic City, NJ, 1998-1999:*** Assigned various responsibilities at PCB-contaminated Superfund site which included excavation, stockpiling, waste characterization, shipment and disposal of contaminated soils and construction of a permanent steel storage structure with

concrete foundation. Maintained records for progress and labor reporting. Coordinated project activities including correspondence and planning with URS's subcontractors.

- ***Site Foreman, Higgins Farm Groundwater Treatment System Superfund Site, Franklin Township, NJ, Dec 1995-Apr 1998:*** Provided oversight, planning and coordination of all work completed by Local 472 laborers. Project included construction of a 150 gpm groundwater treatment plant and 20 groundwater extraction wells. Project also included the construction of a 2,000-ft access road, 6,000-ft of influent and effluent piping and 2,000-ft of domestic waterline.

- ***Laborer, Laidlaw, U.S. Environmental Protection Agency, USACE, Newark Dredging Superfund Site, Port Newark, NJ, May-July 1998:*** Dredging and excavation of 20-ft x 50-ft scows (barges) of contaminated material. Dewatering performed with 6-inch discharge pumps. Provided labor support for various other activities.

- ***Pipe Foreman, Foster Wheeler, Piscataway, NJ, Aug 1995:*** Oversaw manufacturing and butt-fusing of poly-pipe. Excavated, installed and backfilled trenches to client specifications.

- ***Shop Steward / Foreman, Interstate International, Lone Pine Landfill Superfund Site, Freehold, NJ, May 1992-Dec 1993:*** Labor Foreman for gabion-basket crew through two phases of 75 acre Superfund site. Responsible for dewatering 3,000-ft trench; created butt-fused poly-pipe path to discharge into frac tank. Constructed and installed boardwalk between swamp area and virgin material staging for equipment accessibility. Also, served as Alternate Safety Officer.

- ***Quality Control, Silverton Marine Boat Factory, Marlboro, NJ, Dec 1978-Dec 1986:*** Responsible for the inspection of all trim work and punchlist items.

Other Training:

OSHA Hazardous Waste Operations Supervisor
40-Hour OSHA HAZWOPER Training, 1994
8-Hour OSHA HAZWOPER Annual Refreshers
Confined Space Entry, Supervisor
CPR/First Aid
Uniform Traffic Safety
UST Safety Training Course, 1995
USACE Construction Quality Management for Contractors
Rutgers University NJRPA S.A.F.E.T.Y. Course

TAREK Z. KHOURI

Education

Ph.D. Candidate, 1996, Environmental Engineering, University of Central Florida, Orlando.
M.S., 1996, Environmental Engineering, University of Central Florida, Orlando.
B.S., 1994, Chemistry, University of Central Florida, Orlando.

Experience

Project Engineer, URS Corp., Cranford, NJ, 1998-Present
Senior Analytical Chemist, The Lebanese Company for the Development and Reconstruction of Beirut Central District (SOLIDERE), Beirut, Lebanon, 1996-98.
Environmental Engineer/Instructor, Department of Civil and Environmental Engineering, University of Central Florida, Orlando, 1994-96.

Fields of Experience

- ***Project Manager, Rhodia Inc, New Brunswick, Linden, NJ, 2000:***. Firmed Fixed Price Contract. Responsible for the remedial action performed at the creek banks of Mile Run Brook. The job involved the excavation of soil contaminated with TPH, PCB and Coumarin at both slopes of the creek banks, followed by the installation of absorbent pads and geotextile fabric along the excavation area. Biologs were finally used to stabilize the toe of the slope. Project completed ahead of schedule and 20% below budget

- ***Quality Control Manager, FAA Tech Center, Area 29, Atlantic City, NJ, 2000-Present:*** Firmed Fixed Price and Time and Materials Contract. Performs quality assurance audit and review for the pre-excavation sampling results performed by FAA subcontractors, using field test kits for PCB and TPH. Project completed ahead of schedule and 30% below budget

- ***Project Manager, LCP Chemicals Inc., Superfund Site, Linden, NJ, 2000-Present:*** Firmed Fixed Price and Time and Materials Contract. Responsible for the interim removal action program for the cleanup (collection, transport and disposal) of petroleum contaminated soil and storage tanks, steel structure demolition, asbestos containing material, elemental mercury, and lab packs. Project completed 15% below budget

- ***Project Engineer, Circuitron Corporation Superfund Site, Ground Water Treatment System, East Farmingdale, NY, 2000-Present.*** Firmed Fixed Price and Time and Materials Contract. Responsible for providing technical direction for on-site staff, and guidance in hazardous waste/material management and performing technical review of reports/contract deliverables. Coordinates with USACE representative for the day-to-day operations and quality control matters.

- ***Project Engineer, Normandy Landfill Treatment Project, Beirut, Lebanon, $56 MM Fixed Unit Price, May 99–Present:*** Responsible for preparing Quality Assurance Project Plans for the remediation work. Supervised laboratory pre-qualification, equipment purchase, fieldwork, chemists training and laboratory analysis.

- ***Environmental Engineer/ Lab Manager, FAA Technical Center, Atlantic City, NJ, Dec 98 – May 99:*** Responsible for laboratory quality control at the PCB-contaminated soils removal project at the Federal Aviation Administration (FAA) Technical Center in Atlantic City, NJ. Responsibilities included the development of sampling and analysis plans, establishment of project data quality objectives, evaluation and selection of laboratories for testing programs, data quality assessment, and preparation of test reports. Responsibilities also included evaluating data quality, performing data validation, and preparing reports documenting measurement uncertainty and limitations for use. In addition to the role as a Laboratory Manager, also served as an environmental consultant for several other projects providing technical assistance for determining appropriate analytical methods for various matrices, costs for proposals, and review of quality assurance project plans.

- ***Senior Analytical Chemist, Solidere, Beirut, Lebanon, July 96- Oct 98:*** Managed the analytical program of a 60 acres' landfill Reclamation Project, including the setting-up of a laboratory, collection and analysis of soil and water samples, assessment of results, and assessment and development of remedial options. The setting-up of the laboratory included the assessment of analytical program requirements, procurement of equipment and analysis of the samples for organic content, metals, and salts. Additionally, corresponded with management, owners, developers, and government representatives in relation to the above.

- ***Environmental Engineer/ Instructor, Department of Civil and Environmental Engineering, University of Central Florida, Orlando, FL, Jan 94- May 96:*** Consulted on environmental engineering projects (carcinogen bioremediation and biological nutrient removal) and served as liaison with owners of contaminated properties, developers, and consulting engineers. Taught Chemical Process Engineering Control lab for environmental engineers. Also prepared instructions for field personnel, selected and executed field and laboratory testing procedures for the Chemistry Department.

Certifications

Project Management 35-Hour, Project Management Institute, 2001
Construction Quality Management for Contractors, U.S. Army Corps of Engineers (USACE), 2000.
Fall Management, St. Paul's Companies, 2000.
Trenching and Excavation Safety, St. Paul's Companies, 2000.
Dredging Regulations, Material Management & Benthic Evaluation, DOTS and USACE, 2000.
IATA/ DOT 24-Hour Air Transportation of Dangerous Goods, 1999.
OSHA 8-Hour Supervisor & Management, 1999.
OSHA 10-Hour Construction Safety, 1999.
OSHA 40-Hour HAZWOPER, 1998.
OSHA 8-Hour HAZWOPER Annual Refreshers
Adult, Infant and Child CPR Certification, American Red Cross, 1999.
Community First Aid and Safety Certification, American Red Cross, 1999.
Registered Professional Engineer (Lebanon, # 4097).
Registered Professional Chemist (Lebanon, # 286).

Publications

Randall, A.A., Khouri, T.Z., (1998) The Effect of Organic Substrates on Enhanced Biological Phosphorus Removal in Continuous Culture and Batch Experiments, Advances in Environmental Research, Vol. 2, No. 2, 218-231; also published on-line

Randall, A.A., Khouri, T.Z., Benefield, L.D., and Hill, W.E. "Comparison of Enhanced Biological Phosphorus Removal Populations under Ten Different Environmental Conditions", IAWQ 19th Biennial Conference, June 21-26, 1998, Vancouver, Canada.

Randall, A.A., Khouri, T.Z., "Observations From Steady-State and Batch Experiments Concerning the Effect on Enhanced Biological Phosphorus Removal of Volatile Fatty Acids and Glucose", 2nd International Conference on Microorganisms in Activated Sludge and Biofilm Processes, July 21-23, 1997, Berkeley, California, USA, pp. 311-318.

Ndon, U., Randall, A., Khouri, T., "Single Stage Anaerobic and Aerobic Sequencing Biotransformation and Mineralization of Tetrachloroethylene (PCE) for the Remediation of Contaminated Soils and Groundwater", in Emerging Technologies in Hazardous Waste Management VIII, 1996 Extended Abstracts for the Special Symposium, Birmingham, Alabama, American Chemical Society, September 9-11, 1996, pp. 648-651.

Personal

Fluent in English, French and Arabic.

Margaret B. Mikulich

Summary of Qualifications

More than 13 years of professional experience in hazardous waste remediation health and safety, construction safety, industrial hygiene, radiological health and safety, training, OSHA regulatory requirements, project health and safety management, and technical writing.

Education

Indiana University of Pennsylvania (IUP), B.S. – Environmental Health, 1987

Professional Experience

Office / Project Health and Safety Coordinator

1993 – Present, Radian International (URS), Gaithersburg, Maryland

- Responsible for evaluating all of the Gaithersburg, MD and Herndon, VA Remediation and Operating Services (ROS) Division projects for chemical, radiological, physical/ construction, biological hazards. Uses initial project evaluation as the basis for the development of a comprehensive site-specific safety program for each project.
- Provides H&S oversight on active hazardous waste/remedial construction projects.
- Provides H&S training and oversees in-house H&S programs for office personnel.
- Assists proposal teams in writing H&S sections for proposals.
- Has also served as on-site Health and Safety Officer (HSO).

Health and Safety Coordinator

1991 – 1993, Ebasco Environmental, Arlington, Virginia

- Evaluated site-specific hazards for hazardous waste site investigations and developed site-specific HASPs.
- Served as an HSO for site investigations and implemented HASP requirements.
- Verified that projects were in compliance with the Corporate H&S Program, federal, state, and client requirements.
- Major clients included NASA - Langley and Stennis Space Center, Army Environmental Center (USATHAMA) – Dugway Proving Grounds, and the Bureau of Reclamation – Krejci Dump Site.

Health and Safety Manager

1990 – 1991, Ebasco Constructors – BROS Superfund Site Project, Bridgeport, New Jersey

- Responsible for overseeing all H&S operations for this multi-million dollar hazardous waste clean-up project.
- Responsible for overseeing a H&S staff and providing "round-the-clock" coverage during the operation of an on-site thermal destruction facility (TDF).
- Also acted as the H&S liaison between more than 100 union workers and site management.
- Site activities included incineration of hazardous waste, contaminated water treatment, surveying the 19-acre lagoon via pontoon boat, removal and identification of unknown drums, debris removal, excavation of contaminated soil, and construction of support facilities.

Margaret B. Mikulich

Industrial Hygienist
1988 – 1990, TSD Environmental Services, Pottstown, Pennsylvania
- Developed and implemented industrial hygiene (IH) monitoring programs for private clients (General Electric, Teleflex Aerospace & Defense) and government clients (City of Philadelphia).
- Generated IH reports detailing monitoring results, and assisted clients with the implementation of report recommendations.

Health and Safety Technician (HST)
1987 – 1988, Phoenix Safety Associates, Valley Forge, Pennsylvania
- Served as an HST on private hazardous waste clean-up sites and federal Superfund sites, including the Burnt Fly Bog Superfund Site in Marlboro, NJ; Tyson's Superfund Site in Upper Merion, PA; and Waste Management's Grows Landfill Leachate Collection Lagoon Removal in Morrisville, PA.

Selections of Representative Experience

Project Health & Safety Coordinator (PHSC), Havertown PCP Superfund Site Cap Installation, and Installation of a Groundwater Extraction and Treatment Plant, Havertown, PA (05/97-present). Currently providing H&S oversight on this $4 million Superfund site. Remedial construction activities include installation of a landfill cover and construction of a groundwater extraction and treatment plant for the remediation of pentachlorophenol, polynuclear aromatic hydrocarbons, and heavy metals. Duties include development of HASPs and providing technical assistance on all H&S issues, including the site-specific application of H&S programs (construction safety, spill control, medical surveillance, confined space, heavy equipment operation, heat/cold stress, electrical safety, fall protection, excavation/trenching, hazard communication, respiratory protection, personal protective equipment (PPE), and process safety).

Site HSO and PHSC, Fort Meade Environmental Restoration Activities, Laurel, MD (1997-present). Currently providing H&S oversight on a wide variety of remediation activities at Fort Meade, including: coordination of unexploded ordnance (UXO) investigation/removal at multiple sites; sampling, identification, and removal of drums with unknown contents; investigate and demolish/remove oil-water separators, gasoline evaporation pits, and acid pits at the airport and the fire training area; install a landfill cap; and remediation of an uncontrolled medical waste site.

PHSC, DuPont Facility Disposal of Radiologically Contaminated Debris Removal, Deepwater, NJ (09/99-12/99). Developed a Radiation Safety Plan and provided project H&S and radiation safety oversight during the removal and disposal of 700 tons of radiologically-contaminated steel. Project activities included sampling and characterization of debris contaminated with Uranium-238, and removal and disposal of the waste material via rail cars.

PHSC, Renovation of Wedge 1 and Basement Segment 3A of the Pentagon (01/98-01/00). Provided project H&S oversight during the general demolition, asbestos abatement, lead-based paint removal, and removal of building fixtures containing PCBs, mercury, and radioactive sources. Duties included technical assistance on all H&S issues, such as site-specific training program development, H&S audits, incident investigations, IH program implementation, and communicating with a 200+-person, multi-lingual work force. Updated the HASP and provided oversight and technical assistance on the site-specific application of H&S programs, including: construction safety, lock-out/tag-out, medical surveillance, hot work, confined space, mechanized vehicle use, heat/cold stress, power tools, electrical safety, fall protection, ladder/scaffold, hazard communication, respiratory protection, PPE, and hearing conservation.

Margaret B. Mikulich

PHSC, PetroDow Facility Soil and Groundwater Investigation and Slurry Wall and Landfill Cap Installation, Talcahuano, Chile (08/95-12/96). Responsible for the research and development of a HASP for the remediation of vinyl chloride/other chlorinated hydrocarbons contamination. As one of the first HASPs written for international remedial construction work, assisted in the resolution of key H&S issues - both for local employees working without the benefit of hazardous waste worker regulations, and also for Radian personnel working in Chile.

Site Health and Safety Officer (HSO) and Site Manager (SM), Soil Removal from the Bunkers at the Former American University Experiment Station, Spring Valley, Washington, D.C. (10/94-01/95). As HSO: wrote a comprehensive HASP addressing potential chemical warfare material hazards (CWM), provided H&S oversight to the Radian work crew, conducted IH monitoring for arsenic and lead, and specified and purchased appropriate PPE. As SM: coordinated daily activities with the client, the U.S. Army Explosive Ordnance Disposal Team, and UXO subcontractor. Arranged for the off-site disposal of hazardous materials, and non-hazardous debris, soil, and wastewater.

Site HSO and PHSC, Cameron Station Building #23 Soil Remediation, Alexandria, VA (11/93-06/00). The first HSO to work on the company's newly purchased mobile Thermal Desorber Unit (TDU). Researched the TDU's operation and created Activity-Hazard Analyses for on-site treatment of 5,500 tons of fuel-contaminated soil. Served as site HSO during the TDU operation during challenging winter weather and site conditions. Successfully dealt with the issues associated with the site remediation occurring in close proximity to active facility buildings. Wrote HASPs and served as HSO/PHSC for follow-on work at Cameron Station – the installation of a soil vapor extraction (SVE) system and O&M of the system.

Training / Certifications

- OSHA 1910.120 Initial 40-hour HAZWOPER Training (1987)
- OSHA 1910.120 Annual Refresher Training (1988-present)
- OSHA 1910.120 Supervisory Training
- OSHA Course 500 – Basic Instructor in Occupational Safety and Health Standards for the Construction Industry (1994)
- Radiation Safety Officer – 40-hour training (1999)
- DOE Radiological Worker II – 24 hours (2000)
- Current First Aid and CPR certification
- USACE Construction Quality Management (1996)

Professional Awards / Accomplishments

2000 A member of the H&S staff responsible for exceeding our division's Recordable Injury Rate (RIR) target goal for 2000, and our actual RIR improved 32 percent versus 1999. Our division completed over 700,000 hours worked without a day away from work.

2000 U.S. Army Corps of Engineers (USACE) Outstanding Project Team Member Delivery Award for the DuPont Chambers Works Project

1996 Radian International Corporate Achievement Award

1996 USACE Recognition of Outstanding Safety Record for three projects conducted at White Sands Missile Range, New Mexico

1995 USACE Commemorative Commendation Medal for work at the Spring Valley, Washington D.C. remediation project

Project Team Member on 12 URS (Radian) projects which received "Outstanding" or "Above Average" CCAS government ratings.

A member of the City of Rockville Board of Commissioners – Science, Technology, and Environment Commission (since 1999).

References

Mr. Frederick Meyer, P.E., URS (Radian), Vice President of Northeast Operations
(301) 258-9780

Mr. Ali Sadrieh, P.E., ECC, D.C. Area Office Manager
(301) 493-0487

Ms. Susan Laflin, Indianapolis Power and Light Company, Health and Safety Manager
(317) 261-5465

Mr. Lynn Dewees, Marcor, Account Representative
(610) 269-3250

Mr. Millard Griffin, CIH, CSP, URS (Radian), Northeastern Regional Health and Safety Manager
(770) 345-9760